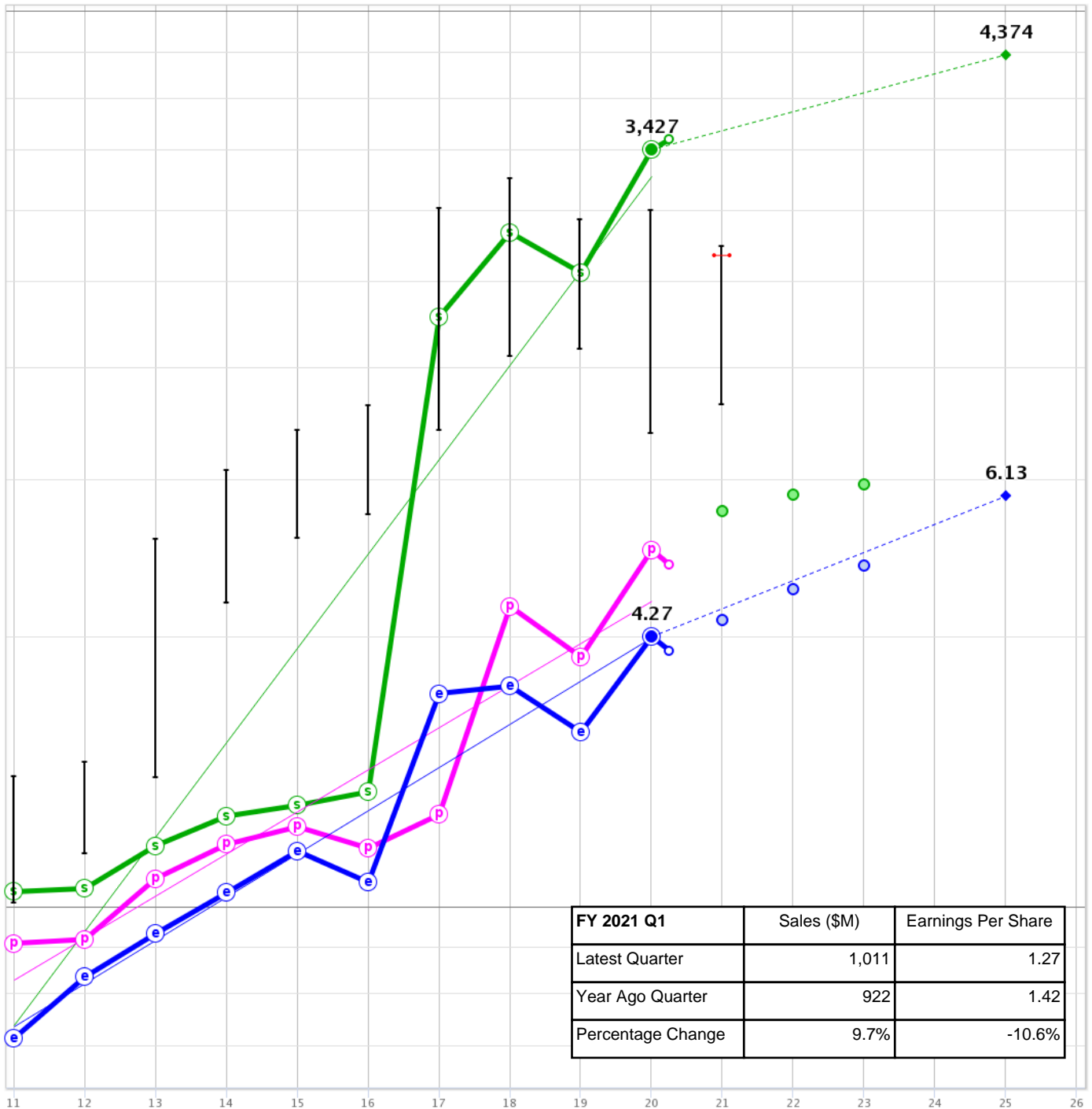


Company	Cboe Global Markets		Date	05/14/21	
Prepared by	FWIC		Data taken from	BI Stock Data	
Where traded	BATS	Industry	Financial Data & Stock Exchanges		
Capitalization ---	Outstanding Amounts	Reference			
Preferred (\$M)	0.0	% Insiders	% Institution		
Common (M Shares)	107.4	1.8	94.2		
Debt (\$M)	1,316.9	% to Tot Cap	27.9	% Pot Dil	0.1

Stock Selection Guide

Symbol: CBOE

1 VISUAL ANALYSIS of Sales, Earnings, and Price



- | | | | |
|-----------------------------------|-------|--|-------|
| (1) Historical Sales Growth | 27.5% | (3) Historical Earnings Per Share Growth | 11.8% |
| (2) Estimated Future Sales Growth | 5.0% | (4) Estimated Future Earnings Per Share Growth | 7.5% |

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Last 5 Year Avg.
Pre-tax Profit on Sales	47.2%	47.3%	49.6%	50.2%	51.1%	46.7%	15.0%	20.6%	20.1%	19.3%	24.3%
% Earned on Equity	54.9%	65.0%	53.1%	75.8%	77.7%	63.7%	14.5%	13.3%	11.1%	13.7%	23.3%
% Debt To Capital	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	28.5%	27.3%	21.4%	28.5%	21.1%

3 PRICE-EARNINGS HISTORY as an indicator of the future

This shows how stock prices have fluctuated with earnings and dividends. It is building block for translating earnings into future stock prices.

CLOSING PRICE 113.83 (05/14/21)

HIGH THIS YEAR 116.39

LOW THIS YEAR 77.63

	A	B	C	D	E	F	G	H
Year	Price		Earnings	Price Earnings Ratio		Dividend	% Payout	% High Yield
	High	Low	Per Share	High A / C	Low B / C	Per Share	F / C * 100	F / B * 100
2016	77.3	58.4	2.27	34.0	25.7	0.96	42.3	1.6
2017	128.3	72.5	3.69	34.8	19.7	1.04	28.2	1.4
2018	138.5	87.9	3.76	36.8	23.4	1.16	30.9	1.3
2019	124.9	89.5	3.34	37.4	26.8	1.34	40.1	1.5
2020	127.9	72.0	4.27	30.0	16.9	1.56	36.5	2.2
AVERAGE		76.1		34.6	23.9		35.6	
CURRENT/TTM			4.12			1.68	40.8	
AVERAGE PRICE EARNINGS RATIO: 29.2				CURRENT PRICE EARNINGS RATIO: 27.6				

4 EVALUATING RISK and REWARD over the next 5 years

Assuming one recession and one business boom every 5 years, calculations are made of how high and how low the stock might sell. The upside-downside ratio is the key to evaluating risk and reward.

A HIGH PRICE - NEXT 5 YEARS

Avg. High P/E 30.0 X Estimate High Earnings/Share 6.13 = Forecasted High Price \$ 183.9

B LOW PRICE - NEXT 5 YEARS

(a) Avg. Low P/E 23.9 X Estimate Low Earnings/Share 3.80 = Forecasted Low Price \$ 90.8

(b) Avg. Low Price of Last 5 Years 76.1

(c) Recent Market Low Price 72.0

(d) Price Dividend Will Support $\frac{\text{Indicated Dividend}}{\text{High Yield}} = \frac{1.68}{2.17\%} = 77.5$

Selected Forecasted Low Price \$ 90.8

C ZONING using 25%-50%-25%

Forecasted High Price 183.9 Minus Forecasted Low Price 90.8 = 93.1 Range. 25% of Range 23.3

Buy Zone 90.8 to 114.1

Hold Zone 114.1 to 160.6

Sell Zone 160.6 to 183.9

Present Market Price of 113.83 is in the **BUY** Zone

D UPSIDE DOWNSIDE RATIO (POTENTIAL GAIN VS. RISK OR LOSS)

$\frac{\text{High Price} - \text{Present Price}}{\text{Present Price} - \text{Low Price}} = \frac{183.9 - 113.83}{113.83 - 90.8} = \frac{70.07}{23.03} = 3.0$ To 1

E PRICE TARGET (Note: This shows the potential market price appreciation over the next five years in simple interest terms.)

$\frac{\text{High Price} - \text{Closing Price}}{\text{Closing Price}} = \frac{183.9 - 113.83}{113.83} = 1.6156$ X 100 = 161.56 - 100 = 61.6 % Appreciation

5 5-YEAR POTENTIAL

This combines price appreciation with dividend yield to get an estimate of total return. It provides a standard for comparing income and growth stocks.

A $\frac{\text{Indicated Annual Dividend}}{\text{Closing Price}} = \frac{1.56}{113.83} = 0.0148 = 1.5\%$ Current Yield

B AVERAGE YIELD - USING FORECAST HIGH P/E

$\frac{\text{Avg. \% Payout}}{\text{Forecast High PE}} = \frac{35.6\%}{30.00} = 1.2\%$

AVERAGE YIELD - USING FORECAST AVERAGE P/E

$\frac{\text{Avg. \% Payout}}{\text{Forecast Average PE}} = \frac{35.6\%}{26.95} = 1.3\%$

C COMPOUND ANNUAL RETURN - USING FORECAST HIGH P/E

Annualized Appreciation 10.1 %
Average Yield 1.2 %
Annualized Rate of Return 11.3 %

COMPOUND ANNUAL RETURN - USING FORECAST AVG P/E

Annualized Appreciation 7.7 %
Average Yield 1.3 %
Annualized Rate of Return 9.1 %

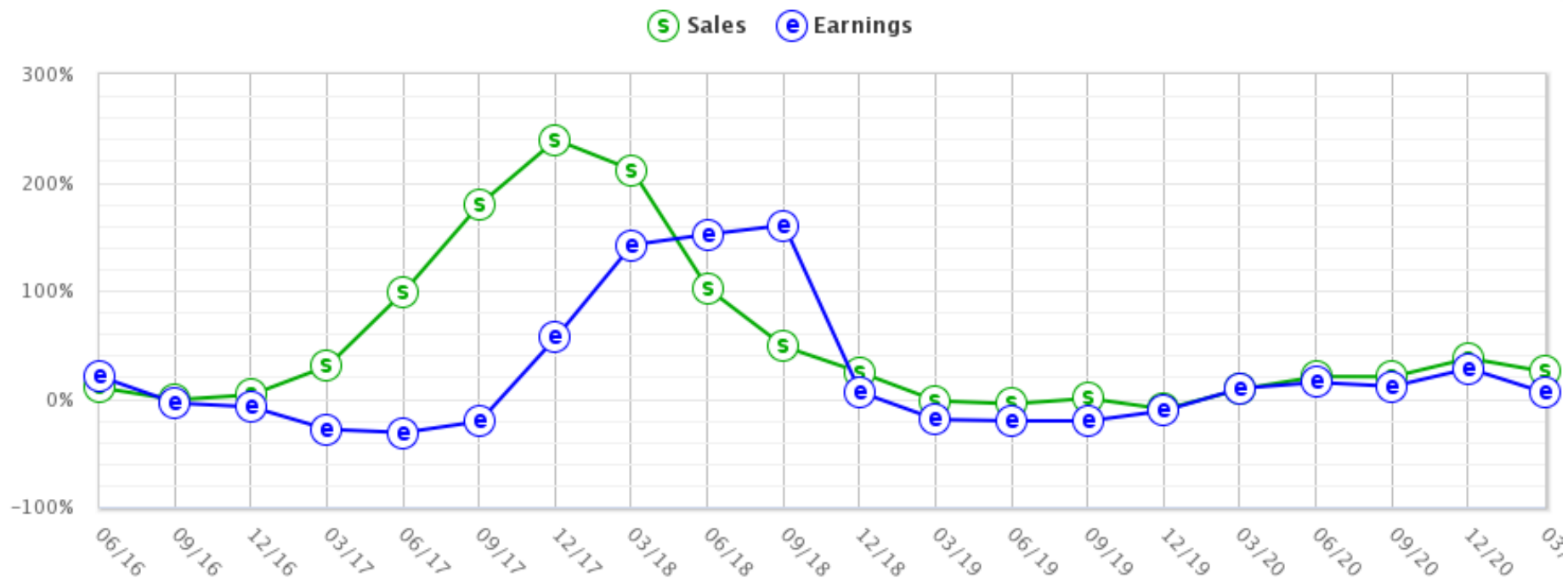
Notes: CBOE 5/17/21 - Arvind

Date	Subject	Description	Type
05/17/21	CBOE Projections - Arvind	<p>Arvind Has gone with estimate of historical sales growth of 5.0 based upon my analysis and research from Value Line, CFRA, Schwab & Fidelity Equity Analysis Reports and ZACK Analyst Report.</p> <p>For historical EPS Growth estimate 7.5 consistent with Value Line. Arvind also used Preferred Procedure Growth Method which resulted in estimated Growth Projection for EPS 7.8%, close to the VL estimate.</p> <p>Management looks OK - Down for PTP trends and Up (for ROE trends) from Yr to Yr. Debt is almost non-existent except for the small amounts of debt incurred during the last two yrs. which is still below the industry average.</p> <p>For evaluating risk and reward over the next 5 years Arvind has selected to go with the high P/E as 30.0 and Low P/E of 23.9, which puts the Stock (Currently at \$113.68) at the end of "Buy" Range (Close to HOLD Range) based on SSG.</p> <p>Note that Current P/E is 27.6, which is little lower than the Average P/E of 29.2. The Stock is currently little undervalued. The upside downside ratio is 3.1 to1. Morning Star does not provide a rating for this stock.</p> <p>CBOE financial health is strong, Dividends are good, uncertainty medium and low debt.</p> <p>According to CFRA, it puts the stock in the "BUY" range and gives it 4 stars rating. It says the target price for 12 months is \$112.64 with Fair Value estimate - N/A. CBOE value is near the high end of its 52 wk range, volatility is low and insider activity is favorable.</p> <p>According to Fidelity - it is in the "Hold" range. Schwab Equity report rating D, says to "Sell"</p> <p>VL says - These quality shares are ranked to perform in tandem with the broader market averages in the year ahead. Nevertheless, CBOE offers substantial long-term capital appreciation potential over the coming 3 to 5 years.</p> <p>My current recommendation is to "HOLD" this stock until the next earnings report out.</p>	Community
01/11/21	Oct Round Table	Got 15% of votes at the Manifest Round Table Oct 2020 meeting. Presented by Mark R.	Community

11/14/20	2017 Inc Tax Benefit	<p>2017 10K p.72</p> <p>We have recorded a \$191.3 million net tax benefit in 2017 associated with the impact of the Jobs Act primarily due to the tax benefit associated with re-measuring net deferred tax liabilities. Although the \$191.3 million net benefit represents what Cboe believes is a reasonable estimate of the impact of the income tax effects of the Jobs Act on Cboe's Consolidated Financial Statements as of December 31, 2017, it should be considered provisional. Once Cboe finalizes certain tax positions and files its 2017 US tax return it will be able to conclude whether any further adjustments are required to its net deferred tax liability as well as to the liability associated with the one-time mandatory deemed repatriation tax. Any adjustments to these provisional amounts will be reported as a component of Tax expense (benefit) in the reporting period in which any such adjustments are determined, which will be no later than the fourth quarter of 2018.</p> <p>No adjustments made in 2018</p> <table border="1" data-bbox="553 625 1300 793"> <thead> <tr> <th>Changes for 2017</th> <th>Adjmnts</th> <th>New values</th> </tr> </thead> <tbody> <tr> <td>Sales 2229.1</td> <td></td> <td></td> </tr> <tr> <td>PTP 334.4</td> <td>-191.3</td> <td>143.1</td> </tr> <tr> <td>Net Inc 396.7</td> <td>-191.3</td> <td>205.4</td> </tr> <tr> <td>EPS 3.69</td> <td></td> <td>1.91</td> </tr> <tr> <td>Shares 107.5</td> <td></td> <td></td> </tr> </tbody> </table>	Changes for 2017	Adjmnts	New values	Sales 2229.1			PTP 334.4	-191.3	143.1	Net Inc 396.7	-191.3	205.4	EPS 3.69		1.91	Shares 107.5			Community
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Quarterly Growth Trend Data

Graph: Trailing 4 Quarters, Last 5 Years of Data



Period	Quarterly Data								Last 12 Months Data								
	EPS		Pre-Tax Profit			Sales		Income Tax Rate	EPS	Pre-Tax Profit		Sales	Income Tax		%Change		
	\$	%Change	\$ Mil	%Sales	%Change	\$ Mil	%Change		\$	\$ Mil	%Sales	\$ Mil	%Rate	EPS	Pre-Tax Profit	Sales	
03/21	1.27	-10.6	192.9	19.1	-11.3	1,010.8	9.7	28.9	4.12	635.8	18.1	3,516.4	187.6	29.5	5.4	7.4	24.9
12/20	0.81	5.2	122.9	14.6	7.6	844.2	41.0	29.0	4.27	660.4	19.3	3,427.1	192.8	29.2	27.8	31.4	37.2
09/20	1.01	7.4	163.4	20.6	16.0	792.7	17.4	32.7	4.23	651.7	20.5	3,181.5	182.9	28.1	11.3	15.5	20.2
06/20	1.03	32.1	156.6	18.0	30.9	868.7	40.0	27.5	4.16	629.2	20.5	3,064.2	164.2	26.1	14.9	16.6	20.3
03/20	1.42	67.1	217.5	23.6	70.2	921.5	52.9	27.6	3.91	592.2	21.0	2,816.1	157.3	26.6	9.5	9.7	8.6
12/19	0.77	-37.4	114.2	19.1	-35.0	598.6	-19.9	24.4	3.34	502.5	20.1	2,497.2	130.8	26.0	-11.2	-12.0	-9.8
09/19	0.94	23.7	140.9	20.9	21.2	675.4	17.3	24.8	3.80	564.0	21.3	2,646.3	142.3	25.2	-20.7	12.9	0.2
06/19	0.78	6.8	119.6	19.3	-0.2	620.6	-7.0	29.4	3.62	539.4	21.2	2,546.8	138.1	25.6	-20.6	10.3	-4.9
03/19	0.85	-18.3	127.8	21.2	-19.8	602.6	-22.5	25.5	3.57	539.6	20.8	2,593.7	140.0	25.9	-19.4	13.5	-2.1
12/18	1.23	-45.6	175.7	23.5	68.8	747.7	20.5	21.2	3.76	571.2	20.6	2,768.8	148.8	26.0	5.9	70.8	24.2

Quarterly Growth Trend Data

Graph: Trailing 4 Quarters, Last 5 Years of Data

Quarterly Data									Last 12 Months Data								
Period	EPS		Pre-Tax Profit			Sales		Income Tax Rate	EPS	Pre-Tax Profit		Sales	Income Tax		%Change		
	\$	%Change	\$ Mil	%Sales	%Change	\$ Mil	%Change			\$	\$ Mil		%Sales	\$ Mil	%Rate	EPS	Pre-Tax Profit
09/18	0.76	43.4	116.3	20.2	9.8	575.9	-5.8	26.3	4.79	499.6	18.9	2,641.8	-80.0	-16.0	160.3	63.6	48.1
06/18	0.73	21.7	119.8	17.9	12.9	667.5	4.2	30.7	4.56	489.2	18.3	2,677.3	-57.8	-11.8	151.9	83.4	101.6
03/18	1.04	550.0	159.4	20.5	771.0	777.7	118.3	25.9	4.43	475.5	17.9	2,650.6	-50.0	-10.5	142.1	94.5	211.5
12/17	2.26	310.9	104.1	16.8	38.8	620.7	254.5	-147.0	3.55	334.4	15.0	2,229.1	-42.7	-12.8	56.4	9.1	239.3
09/17	0.53	6.0	105.9	17.3	57.3	611.4	291.4	43.1	1.84	305.3	17.1	1,783.5	103.6	33.9	-21.0	-1.9	179.6
06/17	0.60	-3.2	106.1	16.6	26.6	640.8	292.3	35.9	1.81	266.7	20.1	1,328.3	88.4	33.1	-31.4	-22.8	98.7
03/17	0.16	-73.3	18.3	5.1	-77.3	356.2	119.4	16.9	1.83	244.4	28.7	850.8	83.0	34.0	-28.5	-27.1	30.1
12/16	0.55	-9.8	75.0	42.8	-5.9	175.1	12.3	39.8	2.27	306.6	46.7	656.9	121.0	39.5	-7.7	-5.4	3.5
09/16	0.50	-38.3	67.3	43.1	-33.6	156.2	-16.5	39.9	2.33	311.3	48.8	637.8	120.5	38.7	-4.1	-5.2	-1.1
06/16	0.62	14.8	83.8	51.3	13.8	163.3	9.8	39.2	2.64	345.4	51.7	668.6	128.1	37.1	20.5	14.5	10.2
03/16	0.60	20.0	80.5	49.6	16.2	162.3	13.6	38.9	2.56	335.2	51.3	654.0	124.2	37.0	19.1	12.7	8.6
12/15	0.61	5.2	79.7	51.1	-5.1	155.9	-6.3	36.7	2.46	324.0	51.1	634.5	120.1	37.1	11.3	4.6	2.8
09/15	0.81	42.1	101.5	54.2	35.6	187.0	25.6	33.5	2.43	328.3	50.9	645.1	125.4	38.2	13.0	10.2	8.9
06/15	0.54	8.0	73.6	49.5	6.1	148.7	3.3	39.1	2.19	301.7	49.7	607.0	116.6	38.7	6.8	3.7	4.6
03/15	0.50	-10.7	69.3	48.5	-15.0	142.8	-9.5	39.0	2.15	297.4	49.4	602.2	114.2	38.4	3.9	0.3	2.5
12/14	0.58	11.5	83.9	50.4	16.3	166.5	17.4	41.2	2.21	309.7	50.2	617.2	119.6	38.6	11.1	9.2	7.9
09/14	0.57	21.3	74.8	50.2	10.2	148.9	8.9	35.4	2.15	297.9	50.3	592.6	111.3	37.3	12.0	10.0	5.8
06/14	0.50	-3.8	69.4	48.2	-7.3	143.9	-4.5	38.1	2.05	291.0	50.1	580.4	111.4	38.3	4.1	10.4	5.2
03/14	0.56	16.7	81.5	51.6	18.7	157.9	10.6	39.9	2.07	296.5	50.5	587.2	113.7	38.4	9.5	16.6	10.0
12/13	0.52	15.6	72.2	50.9	21.5	141.8	9.0	36.1	1.99	283.7	49.6	572.1	107.7	38.0	11.8	16.9	11.7
09/13	0.47	-9.6	67.9	49.7	12.2	136.7	6.6	39.1	1.92	270.9	48.3	560.3	100.9	37.2	14.3	15.0	11.5
06/13	0.52	18.2	74.9	49.7	14.1	150.8	13.7	38.4	1.97	263.5	47.8	551.9	88.4	33.6	22.4	5.6	6.6
03/13	0.48	29.7	68.7	48.1	20.6	142.7	17.6	38.3	1.89	254.3	47.7	533.7	87.2	34.3	23.5	5.9	5.6
12/12	0.45	28.6	59.4	45.7	13.5	130.1	8.2	33.1	1.78	242.6	47.3	512.3	85.0	35.1	17.1	1.0	0.8
09/12	0.52	15.6	60.5	47.2	-18.8	128.3	-10.6	24.4	1.68	235.5	46.9	502.5	86.2	36.6			
06/12	0.44	22.2	65.7	49.5	16.6	132.5	10.2	41.4	1.61	249.5	48.2	517.8	103.9	41.6			
03/12	0.37	2.8	57.0	46.9	0.1	121.4	-2.1	41.3	1.53	240.2	47.5	505.5	99.5	41.5			
12/11	0.35		52.3	43.5		120.2		39.2									
09/11	0.45		74.6	51.9		143.6		44.6									
06/11	0.36		56.3	46.8		120.3		40.7									
03/11	0.36		56.9	45.9		124.0		42.2									